

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALAN G. WOOD, WARREN M. FARNWORTH,
DAVID R. HEMBREE, SIDNEY B. RIGG,
WILLIAM M. HIATT, PETER BENSON,
KYLE K. KIRBY, and SALMAN AKRAM

Appeal 2007-0942
Application 10/666,742
Technology Center 2800

Decided: March 5, 2007

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and
CATHERINE Q. TIMM, *Administrative Patent Judges*.
KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 17-21, 23-27, and 30-34. The Examiner has withdrawn the rejection of claims 22, 28, and 29, which claims stand objected to as being dependent upon a rejected base claim. Claim 17 is illustrative:

17. A method for thinning a semiconductor substrate, comprising:
forming a support structure on an active surface of the semiconductor
substrate;
removing material from a back side of the semiconductor substrate to form a
thinned semiconductor substrate; and
transporting the thinned semiconductor substrate for further processing.

The Examiner relies upon the following references in the rejection of
the appealed claims:

Leedy	US 5,869,354	Feb. 9, 1999
Grigg	US 6,562,661 B2	May 13, 2003

Appellants' claimed invention is directed to a method for thinning a
semiconductor substrate comprising forming a support structure on the
active surface of the substrate. Material is then removed from the back side
of the substrate.

Appealed claims 17-20 stand rejected under 35 U.S.C. § 102(b) as
being anticipated by Leedy. Claims 21, 23-27, and 30-34 stand rejected
under 35 U.S.C. § 103(a) as being unpatentable over Leedy in view of
Grigg.

We have thoroughly reviewed each of Appellants' arguments for
patentability. However, we find that the Examiner's rejections are well
founded and supported by the prior art evidence relied upon. Accordingly,
we will sustain the Examiner's rejections for essentially those reasons
expressed in the Answer.

We consider first the Examiner's § 102 rejection of claims 17-20.¹ Appellants do not dispute the Examiner's factual determination that Leedy describes providing a support structure on the active surface of a semiconductor substrate and thinning the back side of the substrate. It is Appellants' principal argument that Leedy's provision of a preformed support does not meet the requirement of forming a support structure on the active surface of the substrate. According to Appellants, the "*preformed* bonding frame 19 of Leedy, which is *bonded* to the substrate 10, is not *formed on* an active surface of a semiconductor substrate" (principal Br. 7, second para.). In support of their argument, Appellants submit a number of definitions for the word "form" at page 3 of their Reply Brief, including, "to construct or frame" and "to make or produce." However, we do not find that these definitions are availing to Appellants. In our view, Leedy's bonding of support structure 19 is fairly encompassed by the definitions of the verb "form" offered by Appellants, namely, to construct, to frame, to make, or to produce. Appellants' Specification has not provided any particular definition of the term "forming" which would exclude the bonding disclosed by Leedy.

¹ Since Appellants have not separately argued any of claims 17-20, these claims stand or fall together.

We now turn to the Examiner's § 103 rejection of claims 21, 23-27, and 30-34.² The Examiner appreciates that Leedy does not disclose forming a layer of unconsolidated material over at least an outer peripheral portion of the active surface of the semiconductor substrate and at least partially consolidating the material. However, we fully concur with the Examiner that Grigg evidences the obviousness of doing so to achieve the benefit articulated by Grigg, namely, to provide stiffeners for preventing torsional flexion or bending of the connective structures for semiconductor devices. We are not persuaded by Appellants' argument that "neither Leedy nor Grigg provides any teaching or suggestion that the stiffening elements of Grigg, which merely reinforce or stiffen parts of a flexible substrate as components are being secured thereto, would be useful in a thinning process" (principal Br. 9, last para.). The stiffening elements of Grigg would not have been incorporated into the structure of Leedy to facilitate the thinning process but, rather, to provide bending stability to the flexible substrate. While Appellants maintain that "it is a thick peripheral portion of a semiconductor substrate that reinforces the thinned portion of the substrate - no additional element need be formed on or secured to the substrate for reinforcement" (sentence bridging principal Br. 9-10), it would have been *prima facie* obvious to one of ordinary skill in the art that adding the stiffeners of Grigg would provide additional bending stability to the semiconductor substrate of Leedy. We note that Appellants base no

² Since Appellants do not provide separate arguments for this group of claims either, these claims stand or fall together with claim 21.

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argument upon objective evidence of nonobviousness, such as unexpected results.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

clj

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